

AMENDMENTS TO THE SPECIFICATION

A1 [0007] When the torsion bar is rotatably connected to the reel and the locking base, axial ~~hole~~ holes of hexagonal cross section are respectively formed at the center positions of the reel and the locking base, and torque transmitting shafts of hexagonal cross section are respectively provided on the torsion bar at the position where the reel and the locking base are rotationally connected, so that the torque transmitting ~~shaft~~ shafts are press-fitted into the axial holes on the reel and the locking base. In this case, in order to prevent backlash at the time of press-fitting, three backlash preventing ribs *i, j, k* are conventionally provided respectively at the centers of the three sides *c, e, g*, which are not adjacent, out of six arc-shaped sides *c, d, e, f, g, and h* of the axial hole *b* having a hexagonal cross section formed on the reel *a* as shown in Fig. 7, for example, to fix and support the torsion bar *m*. Likewise, three backlash preventing ribs are also formed on the center positions of three arc-shaped sides of the axial hole having hexagonal cross section formed on the locking base, though it is not shown.

[0008] However, providing backlash preventing ribs *i, j, k* at the center positions of the sides *c, e, g* of the hexagonal cross section of the axial hole *b* as in the conventional case has ~~a~~ the following problem. That is, when a load is applied to the webbing at the time when the lock of the locking mechanism is actuated and the webbing is being unwound, the reel *a* is apt to rotate in the webbing unwinding direction CW as shown in Fig. 7, and a large force to rotate the torsion bar *m* is applied from the reel *a* to the torsion bar *m*. At this time, since the large force is applied to the torsion bar *m* via the backlash preventing ribs *i, j, k* at the center positions of sides *c, e, g* of the axial hole *b*, the backlash preventing ribs *i, j, k* are collapsed and thus a gap is generated between the reel and the torsion bar. Such a gap between the axial hole in the reel *b* and the torsion bar *m* causes backlash and thus contributes to generate squeak and rattle. Likewise, a gap is also generated between the torsion bar *m* and the locking base.

A2 [0011] The torsion bar includes a first torque transmitting shaft to be press-fitted into the axial hole on the reel and ~~the a~~ a second torque transmitting shaft press-fitted into the axial hole on the locking member. A backlash preventing portion for preventing backlash in the press-fitted state of at least one of the first torque transmitting shaft and the second torque

transmitting shaft is provided on at least one of the first torque transmitting shaft and the second torque transmitting shaft. Alternatively, the preventing portion may be provided on at least one of the inner peripheral surfaces of the axial holes on the reel and the locking member at the position where a large or majority of the force generated when rotation of the locking member in the webbing unwinding direction is locked is not applied.

[0013] In the seatbelt retractor of the present invention of such a structure, a backlash preventing portion is provided on at least one of the first torque transmitting shaft and the second torque transmitting shaft or on at least one of the inner surfaces of the respective axial holes on the reel and the same on the locking member, at the position where a large force generated when rotation of the locking member in the webbing unwinding direction is locked is not applied. As a result, the large force generated due to the locking of the locking member (i.e., prevention of the locking member from rotating in the webbing unwinding direction) is not applied to the backlash preventing portion, and the backlash preventing portion does not ~~collapsed-collapse~~.

[0018] Figures 4(a), 4(b) and 4(c) (b) are drawings each showing an alternative example of the cross sectional configuration of the backlash preventing rib, and Figs. 4(d) and (e) are drawings each showing an example of the configuration of the backlash preventing rib along the axis.

[0025] Each end of the torsion bar 7 includes a torque transmission shaft. At one end a second torque transmission shaft 17 is provided to be fitted into the axial hole of the locking base (i.e., the locking member) so that relative rotation relative motion between the locking member and the transmission shaft 17 is prevented. At the other end of the torsion bar 7 a first torque transmission shaft 18 is provided. The shaft 18 fits into the axial hole of the reel 4 so that relative rotation between the torsion bar 7 and the reel 4 is prevented. Preferably, the first and second torque transmission shafts 18, 17 have hexagonal cross ~~section~~ sections having arc-shaped sides with the respective axial holes on the locking base 14 and the reel 4 having corresponding hexagonal cross sections having arc-shaped sides. The first and the second torque transmission shafts 18, 17 of the torsion bar are respectively press-fitted into the respective axial holes of the locking base 14 and the reel 4.

px [0033] Such backlash preventing ribs 20, 21, 22 ~~are~~, as shown in Fig. 3, may be formed by punching at the positions 20a, 21a, 22a in the proximity of the respective sides of the inner peripheral surface of the axial hole 4a of the reel 4 on the side to which a large force from the reel 4 is not applied by the use of a punch 23. As a result of the punching a part of the reel 4 at the peripheral edge of the axial hole 4a is moved toward the torsion bar 7.